ECR EVALUATION
ECR-007DD
Building 123 Strip-Out
February 24, 1998

Prepared by D Hoyt, T Hopkins, with input from R Jensen

SCOPE

Revise the RCRA Closure so that it complied with the approved RCRA Closure Plan This included providing details on closure of the above grade piping, the below grade piping, the sumps, and the pipe chases

BACKGROUND

ECR-007 was generated because the original scope of RCRA Closure in the Construction Package (Statement of Work) did not match the requirements for closure in the approved RCRA Closure Plan for Building 123 The Construction Package was written to reflect closure as stated in the July 1997 Closure Plan - rinse with water only Rinsing with water was an acceptable practice for closing the Building 123 system (an interim status unit) according to the State Regulations for interim status units In August 1997, KH Environmental required that the system be closed in accordance with the RFETS Permit requirements for permitted systems This determination was made after the Fixed Price Contract was awarded

HISTORY

1 July 2, 1997* Comments from CDPHE on the PAM that "Partial closure of this interim status unit requires submittal and approval of a closure plan in accordance with Part 265, Subpart G of the Colorado Hazardous Waste Regulations, which include a 30 day public comment period" (See comment on Section 2 1 1 of Attachment #1)

2 July 25, 1997 A draft closure plan is completed This plan incorporated comments from RMRS Compliance (N VanTyne), KH Project Management (K Dorr), and DOE (B Fitch) for review RMRS also held conversations with CDPHE (C Gilbreth) regarding the content of the plan while it was being drafted, and they concurred with the approach Reference Attachment #2 for excerpts of the July 25 plan

This plan took the following approach

a) The RCRA Unit in Building 123 was an interim status unit, not a permitted unit RMRS Compliance was consulted when the draft was being prepared and clarified that the closure criteria in the RCRA Park A Permit (Section 10) for RFETS was not directly applicable for an interim status unit, but it may be used as a guideline The state regulations for Closure of Interim Status Units was used as

the basis for closure of the system (6 CCR 1007-3, Part 265, Subpart G)

b) The as-built drawings were interpreted to show that the process waste transfer system was upgraded in 1989

c) Based on information from the WSRIC and process knowledge for Building 123, it was determined that the wastes disposed of in Building 123 were for elementary neutralization (acids and bases from RCRA category D002) No listed wastes were disposed of in the process waste system

d) Based on information from a, b, and c above, it was appropriate to close the system by rinsing the process lines with three volumes of water The rinsate would be sampled for pH, radioactivity

3 June - July 1997 The bid documents were being prepared (drafted, reviewed and finalized) for "Deactivation and Demolition" of Building 123 These documents stated that RCRA Unit 40 should be closed by rinsing with three times the volume of water, just as specified in the draft RCRA Closure Plan

RMRS Engineering researches the process waste system and has a sketch drafted which shows what pipe was installed when This drawing went into the bid documents dated July 23, 1997 and into Revision 2 of the PAM dated July 17, 1997

4 August 5, 1997 First written set of comments were received from DOE (B Fitch) These were incorporated, however the original basis (a - d above) was not changed These comments were incorporated and it was believed that the RCRA Closure Plan for 123 was essentially complete and ready for approval by the State

5 August 19, 1997* First set of comments were received from KH Environmental (R Leitner) The comments were significant Responding and changed the approach (a - d) defined above KH Environmental had been working on an Interim Status Closure Plan for RFETS which was very similar to the closure requirements stated in the RCRA Permit (Section 10) for permitted units at RFETS Reference Attachment #3 for a written response to the KH Environmental comments prepared by RMRS (dated August 22, 1997) A summary of the changed approach is summarized below

a) The RCRA Unit in Building 123 would be closed as a permitted unit, according to the RCRA Permit for RFETS even though this was an interim status unit.

b) The as-built drawings were interpreted to show that the process waste transfer system was upgraded in 1989

c) The system would have to be rinsed with trisodium phosphate/sodium carbonate according to the Park A Permit for RFETS. Rinsing with water would not be acceptable despite the fact that information from the WSRIC and process

knowledge for Building 123 indicated that wastes disposed of in Building 123 were for elementary neutralization (acids and bases from RCRA category D002). No listed wastes were disposed of in the process waste system.

d) Based on the RCRA Permit, the system would have to be closed using a solvent solution (a solution of trisodium phosphate/sodium carbonate was selected for Building 123), not water. The rinsate would be sampled for pH and radioactivity. In order for the system to be considered RCRA clean closed, the rinsate would be analyzed to determine if it met the Tier 2 standards in the Rocky Flats Clean Up Agreement (RFCA).

5 September 4, 1997 The RCRA Closure Plan was finalized incorporating comments from KH Environmental described above This went for another review by DOE and CDPHE

6 September 9, 1997 Second set of comments from DOE (D Grosek) No major changes These were incorporated into the November 5, 1997 Closure Plan

7 September 12, 1997 Third set of comments from DOE (T Howell). No major changes. These were incorporated into the November 5, 1997 Closure Plan

8 September 26, 1997* Forth set of comments from DOE, B Fitch These comments were significant They increased the analytical requirements for the rinsate to include the Target Analyte List for Metals and Volatile Organic Compounds See Attachment #4

9 October 1997 A meeting was held with RMRS, KH and CDPHE regarding questions from CDPHE (C Gilbreth) on the Closure Plan One question asked was if there is documentation that most of the RCRA piping was replaced in 1989

10 October 15, 1997 KH/RMRS holds a meeting with the state to answer their questions RMRS Engineering presents the actual piping history, and explains that the Closure Plan will be modified

11 October 16, 1997 RMRS submits a letter of notification to KH requesting that the 45 day notification be sent to CDPHE

12 October 21, 1997 A revised Closure Plan is issued This includes a new write-up accurately describing the piping history, and a new colored drawing Item b of the approach for the closure plan changed based on the revised interpretation of the closure plan The revised approach is summarized below

a) The RCRA Unit in Building 123 would be closed as a permitted unit, according to the RCRA Permit for RFETS even though this was an interim status unit

b) The as-built drawings were interpreted to show that the process waste transfer system was installed in stages over several years. An updated drawing was

included in the November 1997 Closure Plan. Upgrades in 1989 were limited to the underground system to Valve Vault 18.

c) The system would have to be rinsed with trisodium phosphate/sodium carbonate according to the Park A Permit for RFETS Rinsing with water would not be acceptable despite the fact that information from the WSRIC and process knowledge for Building 123 indicated that wastes disposed of in Building 123 were for elementary neutralization (acids and bases from RCRA category D002) No listed wastes were disposed of in the process waste system

d) Based on the RCRA Permit, the system would have to be closed using trisodium phosphate/sodium carbonate, not water The rinsate would be sampled for pH, radioactivity, and Tier 2 standards found in Attachment 5 of the Rocky Flats Clean Up Agreement (RFCA), TAL metals and VOC's

13 October 23, 1997 First set of written comments from CDPHE (C. Gilbreth) on the October 21, 1997 plan The comment/resolution sheet documents a different interpretation of the as-built drawings (see Attachment #4) which was incorporated into the October 21, 1997 Closure Plan

14 October 24, 1997* Fifth set of comments from DOE (D Grosek) These comments request that additional waste codes be analyzed for in the rinsate RMRS incorporates into another version of the Closure Plan issued in November, 1997

a) The RCRA Unit in Building 123 would be closed as a permitted unit, according to the RCRA Permit for RFETS even though this was an interim status unit

b) The as-built drawings were interpreted to show that the process waste transfer system was installed in stages over several years An updated drawing was included in the November 1997 Closure Plan Upgrades in 1989 were limited to the underground system to Valve Vault 18

c) The system would have to be rinsed with trisodium phosphate/sodium carbonate according to the Park A Permit for RFETS Rinsing with water would not be acceptable despite the fact that information from the WSRIC and process knowledge for Building 123 indicated that wastes disposed of in Building 123 were for elementary neutralization (acids and bases from RCRA category D002) No listed wastes were disposed of in the process waste system

d) Based on the RCRA Permit, the system would have to be closed using trisodium phosphate/sodium carbonate, not water The rinsate would be sampled for pH, radioactivity, and Tier 2 standards found in Attachment 5 of the Rocky Flats Clean Up Agreement (RFCA), TAL metals , VOC's, and 11 waste codes (including listed wastes), instead of one waste code originally

15 October 30, 1997 The states requests a written description of the proposed removal of RCRA Unit 40 in Building 123 RMRS prepares this and submits it to KH officially November 5, 1997 (see attached letter)

17 November 4, 1997 Sixth set of comments received from DOE (D Grosek) and second set of comments from CDPHE (C Gilbreth) on the October 21, 1997 Closure Plan See Attachments # 7 and #8 All comments incorporated into the November 1997 Closure Plan The comment/resolution sheet for DOE includes a good summary of the history in closing the unit according to the Permit rather than interim status regulatory requirements

18 November 5, 1997 Another version of the RCRA Closure Plan is issued to DOE which incorporated comments from Dave Grosek, DOE and Chris Gilbreth, CDPHE

19 November 6, 1997 Seventh set of comments from DOE (Dave Grosek). RMRS responds via cc mail (see attached)

20 November 12, 1997 Another version of the RCRA Closure plan is issued which incorporates comments from Dave Grosek, DOE This is formally transmitted to DOE on November 17, 1997

21 November 13, 1997 - November 27, 1997 Several meetings and walkdowns with RMRS Engineering team to discuss details on how to close ancillary equipment (sumps, pumps, secondary containment) Used this information to develop details of a contract change for DWRC

22 November 26, 1997 Public Comment period begins on the RCRA Closure Plan

23 December 8, 1997 ECR-007DD is issued to DWRC This is a contract change to the original bid documents to revised RCRA closure according to the November 12, 1997 RCRA Closure Plan

24 January 8, 1998 The Closure Plan is approved by CDPHE

* Represents a significant change to the RCRA Closure Plan

COST IMPACT

1 Additional hours to revise the RCRA Closure Plan to incorporate additional comments from CDPHE, DOE and KH Environmental

September 4, 1997 version R Jensen, 10 hours, T Hopkins 10 hours, $55/hour = $1,100

October 21, 1997 version T Hopkins 20 hours @ $55/hour = $1,100

November 12, version T Hopkins 20 hours @ $55/hour = $1,100

TOTAL $3,300

2 Additional hours to prepare ECR-007DD and obtain signatures

D Hoyt - 40 hours to prepare the ECR, field work, obtain reviews, comments, incorporate changes, obtain signatures, IWCP review, and review and comment on DWRC's procedure
T Hopkins - 20 hours for field work, assisting D Hoyt in preparation of the ECR, reviews and coordination with KH and CDPHE
T Hopkins - 40 hours to revise the RCRA Closure Plan in October and November 1997
D Pontius - 35 hours for review of the ECR, procedure, and field work
T Johnson - 20 hours to prepare the IWCP and obtain signatures
R Heitland - 6 hours to prepare the CFC and obtain signatures

155 hour @ $55/hour - $8,855

3 Additional cost to DWRC

Approximately $30,000 for chemicals and crew of 3 5 for 30 hours each prepare a procedure, rinse sumps and rinse the pipe chases

Attachment #1

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
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Hazardous Materials & Waste Management Division

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COMPANY/AGENCY: RMRS

TELEPHONE #:

TELEFAX #: 966-8244

FROM: C. Gilbreath

TELEPHONE #:

SUBJECT: 123 PAM DRAFT COMMENTS

DATE: 6/25/97

OF PAGES TO FOLLOW: 3

COMMENTS: Please distribute to Kaiser-Hill

YEO -

your copy for 1:30

meeting Tomorrow -

MTG

DRAFT

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
Building 123 Proposed Action Memorandum Comments

Section	Comment
2 1 1	RCRA Unit 40 - "Closure of RCRA Unit 40 will be conducted in accordance with the Site's Part B RCRA permit..." Unit 40 is not a permitted unit. Partial closure of this interim status unit requires submittal and approval of a closure plan in accordance with Part 265, Subpart G of the Colorado Hazardous Waste Regulations (CHWR) which includes a 30 day public comment period.
2 1.2	IHSS 148 - The sampling and analysis plan (SAP) for IHSS 148 must be submitted and approved by the Division prior to implementation. Public comment is not required, therefore, the final PAM should describe the approval mechanism for the sampling, analysis and remediation of both IHSS 148 and UBC 123 (e.g., the SAP shall be submitted to the Division at least 30 days prior to implementation) In the event that the SAP has not been completed, a compliance schedule which identifies the date for submittal of the SAP to the Division should be added to the final PAM.
2.2.4	Building 123S - "The facility has been closed for approximately one year." Clarify the term "closed". Has the building been certified RCRA clean closed, non-operational or shutdown? 90-Day unit 265.111 / 265.114
2.3.1	Asbestos - Identify the State of Colorado regulation which requires the submittal of either a Demolition Notification form or an Asbestos Abatement Notification form.
2 3.2	Beryllium - This section reads, "No samples identified the presence of beryllium." The Reconnaissance Level Characterization Report however, states "No samples identified the presence of beryllium above the RFETS site housekeeping level of 25 ug/ft^2." Define the term "Site housekeeping level".
2.3.4	RCRA Hazardous Waste in SAAs - For previously generated hazardous waste, characterization should have already been completed using either process knowledge or sampling and analysis results. Revise the paragraph accordingly. In addition, hasn't the waste already been containerized and labeled?
2.3.5	Perchloric Acid - Identify the procedure(s), training and personnel to be used to flush and rinse potentially shock sensitive crystals in the hoods. As identified in the PAM, crystallized perchloric acid may be shock sensitive and represent a hazard. As a result, ensuring safe and proper decontamination of the five hoods is critical.
2 3 9	Metals - "All paints indicated detectable levels of one or more of the metals (lead, chromium, cadmium, and arsenic)." Are the levels of metals found in the paint greater that Toxicity Characteristic Leaching Procedure levels? How will the paint be managed?
3 2 2	Characterization - "Non-Impacted Areas are areas that have no potential for residual radiological contamination." As previously described in Section 2.2.1 "Building 123 was one of the first ten buildings constructed at Rocky Flats. The building has always been used as an analytical laboratory and a dosimetry facility." Based on the history and age of the building, it is not technically defensible to say that there are areas in Building 123

that have no potential for residual radiological contamination.

NUREG 5849 proposes a somewhat different approach which appears to be appropriate for Building 123 It states, "Scans of unaffected areas should cover a minimum of 10% of the floor and lower wall surface area. At least 30 randomly selected measurement locations or an average measurement of 1 per 50 m^2 of building surface area, whichever is greater, for total and removable activity, should be performed for each survey unit. These locations should include all building surfaces. Identification of activity levels in excess of 25% of the guideline, either by scans or measurements, will require reclassification of the area to the "affected" category ..". Will the areas considered non-radioactively contaminated be classified as "non-impacted areas" or as class 3 impacted areas?

3.2.2 Soil sampling of the surrounding process waste lines and the IHSS 148 areas should include sampling for nitrates

3.5 Waste Management - "Working under the direction of RMRS, the qualified and trained subcontractor will also load all hazardous, LLW, and LLM waste into approved containers...and make certain that all regulatory requirements are met." Define the training requirements for the subcontractor(s) generating and managing hazardous and mixed waste. this is documented - Sub/Sub/Sub

5.1.1 Airborne - "Fugitive dust emissions controls are appropriate for the demolition." The statement should read *fugitive emission controls*. Demolition activities mentioned are subject to the AQCC's Regulation No 1, Section III.D.2.h., which does not require a permit, however an abatement plan must be in place and meet the requirements listed in the regulation.

5.2 This section should clearly specify whether the identified regulatory requirements are applicable or whether they are merely relevant and appropriate. This is an important distinction because a requirement determined to be applicable must be met in its entirety, while a requirement that is relevant and appropriate needs to be met considering site conditions and protection of human health and the environment.

5.2.1 RCRA - This section does not include all of the ARARs associated with RCRA. For example, if batteries will be managed as universal waste then the requirements of Part 279 of the CHWR are applicable requirements. In addition, the land disposal restriction (LDR) treatment standards of Part 268 are applicable to any hazardous waste removed from the area of contamination and to any hazardous waste that is excavated from the area of contamination, managed within another unit, and returned to the area of contamination. Finally, the closure requirements of Part 265 are applicable to areas associated with RCRA Unit 40 if hazardous waste was managed in that unit after November 8, 1980 If hazardous waste was not managed after that date, then those requirements may still be relevant and appropriate

CAA

This section states that fluorescent lights will be managed as universal waste. However, the definition of universal waste does not include fluorescent lights, at this time.

DRAFT

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
Building 123 Proposed Action Memorandum Comments

General Comments:

1) The Building 123 PAM does not clearly identify anticipated monitoring activities throughout the decommissioning process. The PAM and the Building 123 Reconnaissance Level Characterization Report identify actual and potential radiological and chemical contamination within the building and surrounding soils. The PAM, however, does not describe necessary air monitoring during decontamination and demolition of the building. In light of the recent problems the Site experienced with the remediation of the T3 and T4 trenches, air should be continuously monitored for radionuclides and beryllium, at a minimum. The PAM doesn't necessarily need to completely describe and define monitoring activities but at a minimum, the PAM must reference the appropriate monitoring procedure(s) for all decontamination and demolition activities to be conducted. This monitoring plan must be available upon request prior to implementation of proposed decommissioning activities. In addition, the SAP for IHSS 178 and UBC 123 should clearly describe any necessary air and water monitoring requirements.

2) It seems premature to submit a PAM for the under-building contamination before necessary characterization has been/can be done. This lack of characterization leads to a lack of the detail that is required in a decision document like a PAM. Section 3.2.4 would typically be expanded to include detailed remediation methods. Once the SAP has been completed, a Remediation Plan which identifies the remediation activities to be utilized shall be submitted to the Division prior to implementation.

Statements that the remediation "will be done according to established procedures" and that "several locations have undergone similar remediation" seem to be used to excuse the lack of detail. This section should not use vague terms like "could", but should describe or reference specific procedures

Other specifics that should be included, if applicable, are:
- air monitoring/air pollution control permits;
- other specific requirements or applicable regulations (cited);
- specific cleanup target levels/performance standards, and
- Radiological Work Permit should be mentioned in 5.1.2.

3) The SAP and Remediation Plan for IHSS 148 and UBC 123 should be included in the Section 3.2.1 list of documents to be prepared. These documents do not go out for public comment, but do require Division approval.

4) The anticipated evaluation of the Environmental Checklist needs to be included in this PAM.

5) The schedule allows for completion of the project within 6 months from the start of building demolition, but shows a 1½ month overlap of building demolition with IHSS remediation. How will both these activities happen simultaneously?

6) The PAM does not identify tank systems and/or valve vaults related to the Original Process Waste Lines. What tank systems and/or valve vaults are connected to the Building 123 process waste system and are they to be decommissioned as part of this PAM? Tank 428 for instance is designed to collect waste generated from Building 123 and should be decommissioned as part of this PAM.

Attachment # 2

Partial

Those portions of

CLOSURE PLAN FOR ~~COMPONENTS OF~~ RCRA UNIT 40 in and under

BUILDING 123

EPA ID No. CO_____

DRAFT

U.S. Department of Energy
Rocky Flats Environmental Technology Site

July 25, 1997

RCRA Unit 40

RCRA Unit 40 is the site-wide network of tanks, pipelines, and sumps constructed to transport and temporarily store process waste from point of origin to on-site treatment and discharge points Sections of Unit 40 covered by this plan include all process waste lines, sumps, and tanks in Building 123, and active underground lines Three underground lines designated as P-1, P-2, and P-3 and active process waste lines exist under Building 123 A diagram of the building and the associated underground process waste lines are shown in Figure 1. The lines transferred the following process waste from Building 123·

- Acids nitric acid, hydrofluoric acid, sulfuric acid, hydrochloric acid, acetic acid, formic acid, oxalic acid, and perchloric acid,
- Bases· ammonium hydroxide and sodium hydroxide;
- Radionuclides: various isotopes of plutonium, americium, uranium, and curium;
- Metals· Calcium, Magnesium, and Iron effluents, beryllium (trace amounts); and
- Others: ammonium nitrate, ammonium thiocyanate, ammonium chloride, ammonium oxalate, ammonium hydroxylamine,ethylene glycol, DDCP, DTPA, potassium permanganate, potassium permanganate, sodium nitrate, sodium carbonate and toluene

The analytical laboratory procedures involved digestion of samples to purify and concentrate the radiological constituents The bulk of the building waste was generated during sample preparation operations Liquid mixed waste from these operations was discarded in the process waste system The pipelines under Building 123 known as P-2 and P-3 were abandoned in 1982 Building operations prior to 1985 were not regulated under RCRA, and, therefore, P-2 and P-3 are not part of RCRA Unit 40, and they are not included in this closure plan These lines will, however, be investigated and treated in the same manner as the underground lines that are part of RCRA Unit 40 Building 123 PAM, which is being submitted concurrently with this closure plan, addresses remediation of P-2 and P-3

The tanks, pipelines, and sumps incorporated into RCRA Unit 40 include the process waste lines, sumps and pumping stations in Rooms 103A, 103, 105, 111,112, 113B, 123A, 123, 124, 125, 126, 126C, 127, 155, 155B, 156, 157, and 158 in the building, and the active underground line that connects to Valve Vault 18 The underground lines are shown in Figure 1 as the "Active Process Waste Lines"

In 1989, the process waste transfer system was upgraded, including the removal of an east-west section of P-1 between MH-2 and MH-3 The north-south section of P-1 between

Building 123 and MH-1 was converted to the new process system Three large, interconnected concrete sump pit areas were installed in rooms 156, 157, and 158 Piping was installed connecting MH-1 to Valve Vault 18 Figure 2 shows the locations of overhead and underground lines and associated OPWLs

6.0 CHARACTERIZATION

6 1 Process Waste Line Characterization

Characterization of the process waste line is primarily based upon process knowledge, and existing documentation which indicates that no hazardous waste has been disposed of in the process waste system. As a final check, the RCRA Unit 40 systems will be flushed with rinse water, and the final rinsate will be sampled for radionuclides. The pH will also be measured

6 2 Soil Characterization

A complete characterization of the soil in the Building 123 area will be done as part of the aforementioned Proposed Action Memorandum Soil characterization will include sampling and analysis of the soil beneath and surrounding Building 123 Following removal of the building superstructure, samples will be collected through the slab to determine the necessity for soil remediation A sampling and analysis plan (SAP) has been written to guide characterization activities in these areas The SAP will incorporate a review of existing records to establish the location of potentially contaminated areas and to define sampling protocol Sample locations, depth and frequency will include recommendations from the RFETS Statistical Applications Group Current planning indicates a need for approximately fifty (50) soil samples beneath the slab of Building 123 and from areas surrounding underground, abandoned OPWLs Samples will be collected at depths immediately below the pipe to locate any contamination that may have leaked from the lines In addition to the PAM soil sampling, for the purposes of this closure plan, (8) additional samples will be taken from locations surrounding the active process waste line running from the building to valve vault 18 Locations for these samples are shown in Figure 3 Samples will be analyzed for Volatile Organic Compounds (VOCs), Target Analyte List (TAL) Metals, radionuclides, and nitrates Data quality requirements supporting the analysis effort will conform to criteria established in *Guidance for the Data Quality Objective Process,* EPA QA/G-4 (EPA 1994)

7.0 CLOSURE PERFORMANCE STANDARD

The closure performance standard specifies that hazardous waste facilities are to be closed in such a way as to (1) minimize the need for further maintenance at the facility, and (2) protect human health and the environment by controlling, minimizing, or eliminating potential releases of hazardous waste to the environment (6 CCR 1007-3, Section 265 111).

The building which houses this part of RCRA Unit 40 will be demolished This will ensure compliance with the first standard As detailed earlier, the process waste lines were used to dispose of acids and bases No listed wastes entered in the building process waste system The process lines will be flushed with three volumes of water. Samples of the final rinsate will be analyzed for pH and radioactivity Provided no radioactive contamination is present, the outer surfaces of the pipes will also be tested for radioactivity, and if they are also negative, the piping will be recycled through PU&D. If radioactivity is detected, either in the rinsate or on the surface of the piping, it will be cut up and managed as low level waste.

Additional sampling of the soil surrounding the underground piping will be done as detailed in Section 6 Provided that all soil sampling is negative, underground piping will be grouted and left in place If hazardous constituents are found in the soil, the piping and soil will be removed as part of the Proposed Memorandum of Action for Building 123. If radioactivity is also present the soil and underground piping will be managed as mixed wastes If radioactivity is not found, it will be managed as hazardous waste

Reconnaissance Level Characterization Report for Building 123, (RF/RMRS-97-021, June 1997) However, Radiation Control Technicians will survey all rooms in the building for radiation, and the pipelines and sumps will be monitored for radiological contamination

In accordance with Site procedure 1-74000-IWCP, September, 4, 1996, Integrated Work Control Program (IWCP) work packages will be prepared to direct and control all work. The packages will be organized similarly to the engineering packages. Each work package will contain a Job Safety Analysis (JSA), which addresses all health and safety issues in detail

8 3 Tank System Closure Activities

Final characterization of the soil under Building 123 cannot be determined until the building has been removed. Closure activities of the above ground RCRA Unit 40 tanks and pipelines (in the building) will begin as soon as the building is evacuated, and advance notification has been made to CDPHE. Closure of the underground lines is dependent upon the amount of contamination discovered in the final characterization

8.3a Closure of Pipeline, Sumps, and Pumping Stations in the Building

As detailed above, the process waste system in the building has only been used as an elementary neutralization unit The majority of the liquids that were discarded were acids and bases from the RCRA category D002 No listed waste was put in the system Closure of all pipelines, sumps, and pumping stations in the building will be done as follows

The total system will be flushed with water a minimum of three times the volume of the system to remove any remaining trace amounts of acid or base The rinsate will be measured for pH and radiological constituents The exterior surface of the piping will be checked for radiological contamination and the piping will then be cut and examined for sludge and scale If this inspection determines that the pipes are clear, and they can be released by radiological engineering, they will be handled as scrap metal If sludges or scale are present, the piping will be disposed of in an off site landfill If they are radiologically contaminated they will be handled as low level Sources will be sought to recycle the piping in a radiation environment If this is not possible, they will be disposed as low level waste

8 3b Closure of Underground Pipelines from Building 123 to Valve Vault 18

The choice of closure activities for underground pipelines will be influenced by the extent of hazardous contamination One or more sets of activities will be pursued, based upon the amount of RCRA regulated contaminants that are found

Response to Comments from
R Leitner, KH Env

Attachment #3

8/22/97

Section 1 1 Applicability

This RCRA Closure Plan applies to both the above ground and below ground Process Waste Lines found in or below Building 123 This Closure Plan will identify the options available for the management, removal and/or remediation of these lines This Closure Plan does not apply to pipelines P-1, P-2, or P-3 nor to any soil contamination found under this building Soil contamination will be addressed in this building's 123 PAM

7 0 Closure Performance Standards
INSERT 1

That portion of RCRA Unit 40 within or below Building 123 will be removed and/or capped
One of three possible options or a combination of these options will be selected as the final closure of this unit. A final selection will be made by the Project Manager in conjunction with DOE/Kaiser-Hill based on characterization data It is anticipated that more than one option will be selected for various portions of this unit Based on the analytical data on hand, the following options would be selected

- The above ground portions of this unit would be removed and closed using Option 1, and
- The below ground portions of this unit would be closed using Option 3

Note Option 2 will be used only if all or part of this unit is determined to meet the definition of hazardous debris

OPTION 1, ABOVE GROUND PORTION OF RCRA UNIT 40/ CHARACTERIZATION OF SOLID WASTE AND APPROPRIATE MANAGEMENT PRIOR TO RECEIPT OF APPROVED RCRA CLOSURE PLAN
Since only characteristic wastes have been identified as being handled by this unit, closure will proceed as follows

1 Preliminary Work, The above ground portions of the RCRA Unit 40 will be removed prior to receipt of a signed RCRA Closure Plan The piping will be visual inspected to determine if residuals and/or scaling remain in the pipe
2 All solid waste that is generated (i e , PVC and steel piping, tanks,) will be considered "newly generated wastes" These waste streams will be characterized in accordance with 6 CCR 1007 3 Section 262 11 using either Process Knowledge and/or analytical data

- Piping free of scale and/or residues Process Knowledge will be used to evaluate piping that does not contain residues and/or scale A Process Knowledge evaluation will include an evaluation of the types of waste handled by this system and the type of piping (PVC or stainless steel)
- Piping containing residues and/or scale will be set aside and analytically testing Analytical procedures will be conducted in accordance with approved laboratory procedures which meet the requirements of SW-846 Testing parameters selected for piping containing residues and/or scaling will be volatile, semi-volatile, and metals
- As a pollution prevention consideration, no decontamination of the above ground portions of this unit will occur prior to removal This will eliminate treatment rinsates as a consideration for this option

3 Disposition of solid waste generated from preliminary work Process Knowledge of this unit indicates that portions of these units are radioactively contaminated and must be handled as low level waste

NON-HAZARDOUS SOLID WASTE

- Nonhazardous solid waste will be recycled if economically practicable, OR
- Landfilled in accordance with Rocky Flats DOE procedures

NON-HAZARDOUS LOW LEVEL SOLID WASTE

- Nonhazardous low level waste will be recycled if economically practicable, OR
- Landfilled in accordance with Rocky Flats DOE procedures in an approved Low Level Landfill

HAZARDOUS WASTE AND/OR RCRA MIXED WASTE
Hazardous waste generated from the preliminary strip out will be

- Stockpiled on-site in a State of Colorado approved storage facility unit until a State approved RCRA Closure Plan is received and then managed in accordance with that plan (See Options 2 or 3 for details), or
- Shipped off-site for treatment/disposal at an authorized TSDF

OPTION 2, ABOVE AND BELOW GROUND PORTIONS OF RCRA UNIT 40/ DEBRIS TREATMENT OF TANKS AND ANCILLIARY EQUIPMENT
The process waste system will be managed as RCRA Hazardous Debris. It is anticipated that this option would be selected only for the above ground portion of this unit The above ground portions of this unit could easily be

managed as hazardous debris, while the below ground portion would have to be removed prior to debris treatment The below ground portion of this unit would only be removed if soil contamination is found under Building 123 that required the lines to be removed Once the lines are removed, this option becomes viable

If this option is selected for all or part of this unit, hazardous debris will be considered decontaminated if the process meets the performance standards identified in the Rocky Flats Environmental Technology Site RCRA Permit, Part 10 Closure, Section D, Debris Rule Decontamination Requirements identified in this section include, but not limited to

- Material must meet the definition of debris found in 40 CFR 268 45,
- Selection of a specified technology as identified in 40 CFR 268 45 Extraction or destruction technologies should be selected over immobilization technologies whenever possible For decontaminating hazardous debris piping, tanks and associated ancillary equipment in Building 123 , chemical extraction using water washing and spraying will be selected
- Clean surface debris standards as specified in 40 CFR 268 45 are met.
- All solid wastes generated from extraction and/or destruction technologies used in the Closure of Building 123 (including rinsates) will be characterized in accordance with 40 CFR 262 11 and managed accordingly These treatment residuals do not meet the definition of debris

OPTION 3, DECONTAMINATION OF BELOW GROUND PORTIONS OF RCRA UNIT 40 ASSOCIATED WITH BUILDING 123

The below ground portion of this unit will be decontaminated in accordance with the Rocky Flats Environmental Technology Site RCRA Permit, Part 10 Closure, including Section C, Clean Closure by Decontamination.

Requirements identified in this section include, but are not limited to, the selection of an appropriate solution for decontamination Selection of this solution will be based on the types of wastes previously managed in the unit and the contaminants that are present. Water with sodium carbonate and trisodium phosphate will be used as the decontamination solution (DETERMINE DECON SOLUTION) The system will be flushed with the decontamination solution at a volume of at least three times the volume of the system to remove any remaining trace amounts of acids or bases

This interim status unit will be considered decontaminated

- Upon removal of all visible waste residuals, and
- When the final rinsate contains concentration of priority pollutants (identified as being managed in the Unit, see attachment _____) and heavy metals (268 48 UHC listing) concentrations are below the Tier 2 standards found in Attachment 5 of RFCA, and
- The pH of the rinsate will be between 6 and 9

RINSATE FAILS TO MEET PERFORMANCE STANDARDS

If the rinsate is above the Tier 2, Attachment 5 standards, the lines will be removed and closed following Option #2, Debris Treatment

RINSATE MEETS PERFORMANCE STANDARDS

Once the rinsate solution meets the performance standards, as identified above, the soil sampling program approved in the 123 PAM will be initiated If the soil contamination is above Section 261 Subpart C levels, the pipelines will be removed as part of the soil remediation program If the soil contamination is below Section 261 Subpart C levels the lines will be grouted and capped in place Any remaining soil contaminants will be evaluated as part of the 123 PAM and/or final ROD for the facility

8 3 TANK SYSTEM CLOSURE ACTIVITIES

Final characterization of the soil under Building 123 cannot be determined until the building has been removed Removal and characterization of the above ground portion RCRA Unit 40 within this building will begin as a preliminary action prior to receipt of the approved RCRA Closure Plan and will begin as soon as the building is evacuated Closure of the underground lines is dependent upon the amount of contamination discovered (if any) in the final soil characterization Either Option 2 or 3 (as described in this document) will be used to close this portion of the unit.

8 3 1 Closure of the Above Ground Portion of RCRA Unit 40 found in Building 123
The WSRIC system documents that the process waste system in Building 123 has only been used as an elementary neutralization unit The majority of the liquids that were discarded were acids and bases According to the WSRIC data, no listed wastes were disposed of in this system since 1989 when the above ground portions of this unit were replaced

Closure of this system will be done as follows

- Above ground portion, Option 1 removal/characterization as a preliminary step Any hazardous waste will be either sent off-site for disposal/treatment at an approved TSDF or managed under Option 2 or 3 of this document,
- Below ground portions of this unit will be decontaminated using a solution of water and sodium carbonate and trisodium phosphate The rinsate will be tested to determine if it meets the Tier 2 levels identified in Attachment 5 of RFCA If the rinsate meets these standards the below ground portion of this unit will be considered closed If the rinsate is above the standards, the pipe will be excavated and treated as hazardous debris under Option 2 If soil contamination is present that requires removal/remediation, the pipeline will be removed at that time as part of the soil remediation

8 3 2
Modify RCRA Levels to read
RCRA levels as identified in Section 261 Subpart C

Tier 2 levels as found in Attachment 5 of RFCA

6 1 Process Waste Line Characterization
ABOVE GROUND PORTION OF RCRA UNIT 40 IN BUILDING 123

In 1989 the majority of the above ground portion of the waste process system was replaced At that time, administrative controls were established that prohibited the disposal of organics to the waste process system In addition, satellite accumulation areas were established to manage all organics that were generated in Building 123 That portion of RCRA Unit 40 within Building 123 was used predominately from 1989 on as an elementary neutralization unit for D002 corrosive waste streams However, certain organics such as DDCP, and toluene were used in Americium separation in certain labs These wastes were disposed to the waste process line The WSRIC system does not identify any of these waste streams as being either RCRA listed or characteristic

A determination as to whether a waste is listed can only be made based on "process knowledge" Provided that a good faith effort has been made, the absence of definitive information does not require the generator to "default" to a listed status For the purposes of preparing this Closure Plan, this portion of the RCRA Unit 40 system was used to manage D002 wastes, exclusively

The WSRIC identifies the following process wastes as being disposed of in the process waste system

(INSERT 2 from page 2 of 10 in Closure Plan)

RADIOACTIVE CONSIDERATIONS
Based upon process knowledge, materials from this unit (pipelines, pumps, sumps, etc) must be handled as low level radioactive waste As a result, if any components of this unit are determined to be both RCRA hazardous and low level radioactively contaminated, these materials will be managed as RCRA Mixed Waste

Attachment #4

Section 7 1
Delete the first three bullets and add the following

- Piping in the above ground portion of RCRA Unit 40 in Building 123 is assumed to be low level radioactively contaminated wastes because of the liquids carried during operations,
- Upon removal, an examination of the piping will be made,
  - If the pipe is clean inside (i e , does not contain scale or residue), it will be disposed of as low level radioactively contaminated waste at either Envirocare or Nevada Test Site,
  - If there is scale inside the piping, the appropriate tests will be run to determine if the scale composition is such that results in the pipe being classified as mixed waste In that case, the pipe will be disposed of as low level mixed waste at Envirocare or another approved TSDF,
- All pipe is either Low Level Waste or Low Level Mixed Waste,
- The pipe will not be rinsed to attempt to reduce contamination inside the pipe, because it will generate rinsate,
- If any part of RCRA Unit 40 in Building 123 is sanitary waste, this waste will be sent to the industrial landfill in Erie, Colorado operated by U S A. Waste This company is under contract to Rocky Flats

Section 8 1 Delete second paragraph, last sentence and add the following, "The final rinsate closure performance standards for internal surfaces of tanks (as described in RFCA Permit, Part X Closures) will be used to evaluate the effectiveness of the decontamination The final rinsate volume will not exceed 5% of the capacity of the piping system "

Comment Resolution
Bill Fitch
9/26/97

10/23/97

Comment Resolution Form 123 Closure Plan
Responses prepared by Ted A Hopkins/Richard Jensen
Verbal Comments Received from a meeting with the State , October 15, 1997 in regard to the 123 Closure Plan Present at this meeting were Chris Gilbreath, CDPHE, Richard Jensen, Denver West , Randy Leitner, Kaiser-Hill, Dennis Laurita, Kaiser-Hill, Natalie Van Tyne, RMRS, Dorthea Hoyt, RMRS, and Ted Hopkins, RMRS

Location	Comment	Originator	Response
7 0	What is the status of the above ground portions of RCRA Unit 40? Do you have documentation to support that approximately 90% of the unit was replaced in 1989? Exactly how much piping was replaced and what was left in place?	Chris Gilbreath	Dorthea Hoyt and Bob Campbell reviewed all the engineering files and interviewed personnel familiar with the operations of Building 123 They concluded from these actions that the information regarding the above ground portion of this unit that was contained in the 123 Closure Plan was incorrect. Less than 50% of the above ground portion of this unit was replaced in 1995 Much less than the 80% previously identified and much latter than the original 1989 date From 1952-1997, this building housed various laboratory operations Although administrative controls were added in 1987 to prevent listed wastes from being disposed of into the process waste system, it is a case of too little, too late The result of this change is that both the above ground and below ground portions of RCRA Unit 40 will have to be closed in accordance with 40 CFR 265 standards The 123 Closure Plan was modified to reflect this change Section 7 0 Preliminary work on above ground portion of RCRA Unit 40 was deleted and replaced with 7 0 Closure Performance Standards Three options were identified for both the above ground and below ground portions of this unit Decontamination (rinsate option), Debris treatment, and management as a hazardous waste From 7 0 on, a new numbering system was required For example, Table 10-1 became Table 9-1 A new option was added in Table 9-1 A new color diagram of the building showing the piping history was added
Section 7	What WSRIC data is available to support the position that the above ground portion of the system used only D002 wastes?	Chris Gilbreath	Although WSRIC does not list any listed wastes as being disposed of in the system from 1989 to date, the building did house numerous laboratory operations No administrative controls were in place prior to 1987 Much of the above ground piping has never been replaced and therefore is suspect Therefore, both the above ground and below ground portions of this unit will require RCRA Closure
General	Why wasn't Valve Vault #18 closed with the 123 piping system?	Chris Gilbreath	Valve Box 18 is still in use by Building 122 Therefore Valve Box 18 must remain in service until Building 122 is closed
General	What system is or can be put into place to adequately track the status of RCRA Unit 40 that is being closed in pieces?	Chris Gilbreath	Natalie Van Tyne (RMRS Permitting) will put together a set of files and drawings that reflect the current status of this unit.
General	123 Contingency Plan requirements With this unit being closed, what, if any Contingency Plan requirements are needed?	Ted Hopkins	Chris Gilbreath and Randy Leitner agreed that the Contingency Plan found in the RFETS Permit along with the site-specific health and safety plans would be adequate for Closure of this unit

Attachment #5

Attachment #6

Comments on B123 Closure Plan

Dave Grosek 3305 October 24, 1997

Section 6.1.1 and 7 1.1 are not clear.

Part 6 1 1 of the closure plan lists many chemicals that cannot be hazardous waste, and does not list those that made the system a hazardous waste unit. Previous Part A Permits for Unit 40 included the following EPA hazardous waste codes, and these should be addressed in the closure plan. If these waste codes do not apply then an explanation should be given.

TED HOPKINS

Part A	Included in Section 6 of Closure Plan
D001	No
D002	Yes, acids and bases
D004	No
D005	No
D006	No
D007	No
D008	No
D009	No
D010	No
D011	No
D018	No
D019	No
D028	No
D029	No
D035	No
D038	No
D040	No
D043	No
F001	No
F002	No
F003	No
F005	Yes (Toluene)
F007	No
F008	No
F009	No

Kent - 5215 10/27

Here are Grosek's comments on B123 RCRA Closure Plan

Look different & extensive

Please get these addressed ASAP

Bill Tebbutt

The system must be treated for these constituents - not those listed in the closure plan Most of the ones in the closure plan are irrelevant for RCRA closure.

List each constituents and the associated standard each constituent will be compared to, so a determination of pass/fa can clearly be made. RFCA Attachment 5 standards appear to be more stringent than RCRA standards. Why are RFCA Attachment 5 standards used rather than the RCRA standards already used and accepted at the Site?

All the above information should clearly be presented in Section 7.0 Closure Performance Standard. Will the absolute standard "all visible waste residuals have been removed" work? Even the RCRA clean debris surface standard allows 5% to remain.

Section 7.1.1 should list all constituents included in the Performance standard and the criteria.

Section 7.3. How are we going to look at the inside of pipes? This approach does not seem practical.

Section 6.1.1 includes radionuclides as being present, however, there is no mention of radiation protection or sampl the plan.

TABLE 6-2. TARGET COMPOUND LIST OF VOLATILE ORGANIC COMPOUNDS AND ASSOCIATED EPA WASTE CODES

1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane **F002**	1,2-Dichloroethene (total)
1,2-Dichloropropane	1-1-1-Trichloroethane **F001/F002**	1-1-Dichloroethane
1,1-Dichloroethylene **D029**	1-2-Dichloroethane **D028**	2-Hexanone
Bromoform	Bromomethane	Carbon disulfide **F005**
Carbon tetrachloride **D019/F001**	Chloroethane	Chlorobenzene **D021 /F002**
Chloroform **D022**	Chloromethane	cis-1,3-Dichloropropene
Dibromochloromethane	Ethylbenzene **F003**	Methyl ethyl ketone (butanone) **D035 /F005**
Methylene chloride **F001/F002**	Pyridine **F005**	Styrene
Tetrachloroethylene **D039/F001/F002**	Toluene **F005**	trans-1,3-Dichloropropene
Trichloroethylene **D040/F001/F002**	Vinyl Chloride **D043**	Xylenes (total) **F003**
Acetone **F003**	4-Methyl-2-pentanone	Benzene **D018/F005**

TABLE 6-1
MODIFIED TARGET ANALYTE LIST METALS AND ASSOCIATED EPA WASTE CODES

Aluminum, Al	Antimony, Sb	Arsenic, As **D004**
Barium, Ba **D005**	Beryllium, Be	Cadmium, Cd **D006**
Cesium, Cs	Chromium, Cr **D007**	Cobalt, Co
Copper, Cu	Iron, Fe	Lead, Pb **D008**
Lithium, Li	Magnesium, Mg	Manganese, Mn
Mercury, Hg * **D009**	Molybdenum, Mo	Nickel, Ni
Potassium, K	Selenium, Se **D010**	Silicon, Si
Silver, Ag **D011**	Sodium, Na	Strontium, Sr
Thallium, Tl	Tin, Sn	Vanadium, V
Zinc, zn		

Mercury is not part of the TAL metal list but was added because of its common usage in laboratories

11/4/97

Attachment #7

Comment Resolution Form 123
Responses prepared by Ted A Hopkins

Location	Comment	Originator	Response
6 1 1	The closure plan lists many chemicals that cannot be hazardous waste, and does not list those that made the system a hazardous waste unit Previous Part A permits for Unit 40 include the following EPA hazardous waste codes, and these should be addressed in the closure plan If these waste codes do not apply then an explanation should be given	Dave Grosek	Chris Gilbreath, CDPHE, has maintained during the scoping and review process that the only waste streams/contaminants of concern for this portion of RCRA Unit 40 are those wastes that were disposed of in this portion of the unit A review of the WSRIC system identified only those waste streams that were originally included in the Closure Plan However, since VOAs, Metals, and a fingerprint analysis are going to be conducted, the inclusion of all of the waste codes you identified (except for F007, F008, F009) does not impact the document Therefore, the listing of RCRA Unit 40 Waste Codes (minus the cyanide wastes) and the associated contaminant has been added to Section 6 1 1 An explanation of why the F007-F009 codes were omitted (no cyanides used in electroplating operations in Building 123) was also included A copy of this section will be FAXed to you for review
7 1 1	Section 7 1 1 is not clear	Dave Grosek	RCRA Unit 40 is an interim status unit RMRS Permitting and K-H Environmental Compliance are preparing a site-wide interim status Closure Plan for all interim status units at Rocky Flats This plan has not been submitted to the State Until that time, K-H Environmental Compliance and RMRS have agreed with the State to follow the requirements for closure identified in The Rocky Flats Environmental Technology Site RCRA Permit, Part X Section C of this document states, "Clean closure will be conducted in accordance with one of three methodologies (decontamination, debris rule decontamination, or unit removal " These options are the ones identified in the 123 Partial Closure Plan Section 7 1 1 identifies the performance standards for clean closure which are found in Section C-6 of Part X of the Permit
6 1 1	Section 6 1 1 is not clear	Dave Grosek	Section 6 1 1 has been modified to include all EPA Waste Codes associated with this portion of RCRA Unit 40
6 1 1	The system must be treated for constituents found in the Part A Permit and not those listed in the closure plan	Dave Grosek	The State has taken a different opinion The State is requiring that the Closure Plan address only those waste streams identified as being disposed of in this portion of RCRA Unit 40 However, since we are sampling for VOCs, metal, and fingerprint, all EPA waste codes except F007-F009 are now being addressed
7 1 1	List each constituent and the associated standard each constituent will be compared to, so a determination of a pass/fail can clearly be made RFCA Attachment 5 standards appear to be more stringent than RCRA standards Why are RFCA standards used rather than the RCRA standards already used and accepted at the	Dave Grosek	Two tables have been added identifying the contaminants for which we are sampling and their associated EPA waste codes A reference to Tier 2 actions levels as defined in Attachment 5 were identified as the closure performance standard A regurgitation of these standards was not considered necessary The RFCA standards were used in response to a State comment The Permit requires (under Section C, Clean Closure by Decontamination) that the final rinsate

Location	Comment	Originator	Response
	Site?		contains concentrations of priority pollutants (identified as having been managed in the unit) and heavy metal concentrations less than the maximum contaminant levels for drinking water " Chris Gilbreath recommended (for clarity) that a reference be made to the Tier 2, Attachment 5 of RFCA be used to ensure exactly what standard was being used
7 0	All the above information should clearly be presented in Section 7 0 Closure Performance Standard Will the absolute standard "all visible waste residuals have been removed" work? Even the RCRA clean debris surface standard allows 5% to remain	Dave Grosek	With the addition of the two tables and a discussion on the contaminants for which sampling is required and a reference to Tier 2, (in my opinion) no further explanation is required. The standard for the rinsate is part of the RFETS Permit This standard is much less restrictive than the Debris Rule I do not have to meet clean surface debris standards for the inside of piping following this rinsate standard Visible contamination on a tank system would not include contaminants in the pipe but would include visible contamination on the outside of the pipe, tank surfaces (inside and out) etc Any questions in regard to its application would be directed to the State (Chris Gilbreath) for clarification
7 1 1	Section 7 1 1 should list all constituents included in the Performance standard and the criteria	Dave Grosek	I disagree Section 6 1 1 now identifies the contaminants of concern along with their associated EPA Waste Codes and Section 7 1 1 identifies the Closure Performance Standards, the contaminants of concern were identified in 6 1 1 The State has previously accepted this approach
7 3	How are we going to look at the inside of pipes? This approach does not seem practical	Dave Grosek	You are correct in that the Debris Treatment option is not practical for piping It was added simply to maintain all our possible options It is very practical for sumps and tanks associated with this unit It is possible that a fiber optic instrument could be used to inspect the pipe after and extraction or destruction technology was used, or the pipe could be cut up into pieces short enough to allow visual inspection
6 1 1	Section 6 1 1 includes radionuclides as being present, however, there is no mention of radiation protection or sampling in the plan	Dave Grosek	We are planning on doing a gross alpha/beta sampling However, this sampling was omitted from the Closure Plan since the State does not have authority to regulated radioactive materials Mixed waste, yes, but not the radioactive isotope

Attachment #8

Date prepared 11/4/97
Comment Resolution Form 123
Verbal Comments from Chris Gilbreath, CDPHE
Responses prepared by Ted A Hopkins

Location	Comment	Originator	Response
General	Identify all contaminants of concern and which VOCs will be sampled Be sure to include common contaminants that routinely are found at RF, such as CCl_3, benzene, vinyl chloride, TCE, etc	Chris Gilbreath	Section 6 1 1 has been modified to include contaminants and waste codes associated with RCRA Unit 40 that might have been used in this portion of the unit
7 3	Add one line to explain that the reference to "solid wastes" refer specifically to treatment residuals	Chris Gilbreath	Adopted. Line added.
7 3	Option 3 Clarify what will happen to the piping if "debris treatment standards" are not met	Chris Gilbreath	A line was added that states, In the event closure performance standards are not met, the piping will be handled as hazardous/mixed waste under Option #2
1 1	Clarify what sections of piping will closed under this RCRA Closure Plan and what sections will be left I suggest referencing the First Floor Plan and its color coding	Chris Gilbreath	Dorthea Hoyt modified this section and added the recommended changes